

REMARKS

This Amendment is responsive to the Office Action identified above, and in any other manner indicated below.

PENDING CLAIMS

Claims 1-9 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, deleted and/or added in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused or new claims in which Applicant is presently interested. At entry of this paper, Claims 1-8 and 10-21 will be pending for consideration and examination in the application.

REJECTION UNDER §112, 2ND ¶ OBVIATED VIA CLAIM AMENDMENT

Claims 1-8 were rejected under 35 USC §112, 2ND ¶, as being indefinite for the concerns listed at Item 3 on page 2 of the Detailed Action. Claims 1-8 have been carefully reviewed and carefully amended where appropriate in order to address the Office Action listed concerns. As the foregoing is believed to have addressed the §112 2ND ¶ concern identified in the Action, reconsideration and withdrawal of the §112 2ND ¶ rejection are respectfully requested.

REJECTIONS UNDER 35 USC §102

All 35 USC §102 rejections (*i.e.*, the 35 USC §102 rejection of Claims 1, 4 and 9 as being anticipated by Brandemeier *et al.* (US 5,961,190 A); the 35 USC §102

rejection of Claims 1-6 and 8-9 as being anticipated by Reinecke (US 4,345,796 A); and the 35 USC §102 rejection of Claims 1-9 as being anticipated by Behrends *et al.* (US 6,088,638 A)) are respectfully traversed. Such rejections have been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

Unrelated to any prior art rejection, Claim 9 has now been canceled without prejudice or disclaimer, thus rendering this rejection of such claims obsolete at this time. Patentability of remaining ones of the rejected claims is supported as follows.

In order to properly support a §102 anticipatory-type rejection, any applied art reference must disclose each and every limitation of any rejected claim. The applied art does not adequately support a §102 anticipatory-type rejection because, at minimum, such applied art does not disclose (or suggest) the following discussed limitations of Applicant's claims.

Applicant's disclosed and claimed invention is directed toward providing arrangements having an improved backup braking capability. To accomplish the same, Applicant's disclosed and claimed invention contains important

features/limitations. Examples of the important features/limitations, using claim 1, include: "a power supply source to store electric energy and supply electric power to the brake actuators; power source lines to connect the power supply source and the brake actuators; a power breaker provided to selectably connect the power source lines, and to selectably disconnect the power source lines during times when the power supply source is unreliable, so as to insulate and separate the plurality of brake actuators into at least two systems; an auxiliary power supply source to store electric energy and supply electric power to brake actuators of one system of the at least two systems during the times when the power supply source is unreliable, wherein the power supply source and the auxiliary power supply source provide power at mutually different voltage levels; and a converter to convert a voltage level of the auxiliary power supply source to substantially a voltage level of the power supply source, and to apply a thus converted voltage level to the one system." Other ones of Applicant's claims contain similar or analogous features/limitations.

In short, it is respectfully submitted that none of applied references would support a §102 anticipatory-type rejection (or a §103 obviousness-type rejection) because such references do not disclose or suggest: power supply sources of mutually differing voltage levels; a power breaker provided to selectably disconnect the power source lines and to insulate and separate the plurality of brake actuators into at least two systems the during times when the power supply source is unreliable; and/or, a converter to convert a voltage level of the auxiliary power supply source to substantially a voltage level of the power supply source, and to apply a thus converted voltage level to the one backup breaking system.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

Applicant's disclosure shows example embodiments of Applicant's invention, for example, FIG. 1. Applicant's invention includes the following four features:

- (1) a first power line (31b) connected to a first power supply source (11);
- (2) a second power line (31a) connected to a second power supply source (12) via a converter (13), the voltage of the second power supply source being lower than the voltage of said first power supply source;
- (3) a power breaker (20) disposed between the first and second power lines to allow the connection between the first and second power lines disconnected; and
- (4) a plurality of brake actuators (1a,2a,3a; 1b,2b,3b; 1c,2c,3c; 1d,2d,3d) arranged to be coupled to the first and the second power lines.

The electrically-driven brake device according to the present invention may be operated, for example, with a dual battery system including a main high-voltage (36V) battery (11) and an auxiliary low voltage battery (12). The voltage (12V) of the auxiliary low voltage battery (12) can be boosted up by the converter (13) which outputs a high voltage. In a normal condition of the main power supply system (31), all of the brake actuators (1a,2a,3a; 1b,2b,3b; 1c,2c,3c; 1d,2d,3d) are supplied with electric power from the main battery (11) via the power supply lines (31a, 31b).

When a failure is detected in the main power supply system, the power breaker (20) operates to isolate the main power line (31b) and the main battery (11) from the actuators, and the auxiliary battery (12) backs up the power supply system such that the converter (13) outputs a high voltage to the power line (31a) to drive a

part of the actuators (1a12a,3a; 1b,2b,3b) to operate portions of the braking system in an emergency.

Brandmeier *et al.* discloses a brake system including two brake circuits 2 and 3. The brake circuit 2 includes the brake devices 4 and 5 power-supplied by a regular battery 24. Another brake circuit 3 includes the brake devices brake devices 6 and 7 power-supplied by an additional smaller battery 25. The description of Brandmeier *et al.* is silent on the voltages of the regular battery 24 and the additional smaller battery 25. However, since the two brake circuits 2 and 3 are directly connected via a fuse 28, the two batteries 24 and 25 must supply the same voltage. Accordingly, this reference does not suggest to use a high-voltage battery and low-voltage battery with a converter for brake system. More particularly, at minimum, this reference does not teach the above feature (2) of the present invention.

Reinecke shows a brake control system wherein a single power supply 11 is connected to parallel brake devices 1 and 2 via fuses 9 and 10, respectively. Each of the brake devices 1 and 2 can be individually disconnected from the power supply. As a deficiency, Reinecke does not suggest to use a high voltage battery and a low voltage battery with a converter. Accordingly, Reinecke does not teach the feature (2) of the present invention.

Behrends *et al.* shows basically a same circuit structure as the circuit of Reinecke. That is, a single power supply 6 is connected to parallel electrical loads 18a and 18b via the fuses 10a and 10b, respectively. Behrends *et al.* does not suggest to use a high voltage battery and a low voltage battery with a converter. Accordingly, Behrends *et al.* does not teach the feature (2) of the present invention.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a §102 anticipatory-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §102 rejection, and express written allowance of all of the §102 rejected claims, are respectfully requested.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, *i.e.*, Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

EXAMINER INVITED TO TELEPHONE

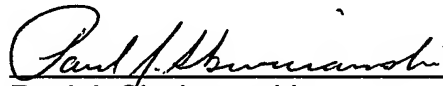
The Examiner is invited to telephone the undersigned at the local D.C. area telephone 703-312-6600, to discuss an Examiner's Amendment or other suggested action for accelerating prosecution and moving the present application to allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

Attached hereto is a Petition for Extension of Time and Form PTO-2038 authorizing payment of the requisite Petition and claim fees (Codes 1201/1253). To whatever other extent is actually appropriate, Applicant respectfully petitions the Commissioner for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper to ATS&K Deposit Account No. 01-2135 (referencing Case No. 501.37471X00).

Respectfully submitted,



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ATTACHMENTS:

Petition for Extension of Time
Form PTO-2038 (Coded 1201/1253)